AMERICAN

JOURNAL OF PHILOLOGY

VOL. LXXXII, 3 WHOLE NO. 327

THE PLAGUE UNDER MARCUS AURELIUS.

The great epidemic which occurred in the reign of Marcus Aurelius has a conspicuous place among the misfortunes of antiquity.[1] It is "not less celebrated," we read, than "the plague of Athens described by Thucydides."[2] It has the distinction of being associated with two great figures, being sometimes called the Antonine plague, sometimes the plague of Galen. Moreover, scholars whose opinions deserve respect have regarded it as a turning point in the whole history of the Empire. Niebuhr wrote, "This pestilence must have raged with incredible fury; and it carried off innumerable victims. As the reign of M. Aurelius forms a turning point in so many things, and above all in literature and art, I have no doubt that this crisis was brought about by that plague. . . . The ancient world never recovered from the blow inflicted upon it by the plague which visited it in the reign of M. Aurelius."[3] Another great scholar, Otto Seeck,

[1] The fullest and best collection of references is in J. Schwendemann, *Der historische Wert der Vita Marci bei den Scriptores Historiae Augustae* (Heidelberg, 1923), pp. 54-62, 67-9. Also deserving mention are J. F. K. Hecker, *De peste Antoniniana commentatio* (Berlin, 1835); H. Haeser, *Lehrbuch der Geschichte der Medicin und der epidemischen Krankheiten*,[3] III (Jena, 1882), pp. 24-33; K. Buresch, *Klaros* (Leipzig, 1889), pp. 67-78; Friedländer, *Sittengeschichte*, I[10], p. 31; W. Zwikker, *Studien zur Markussäule*, I (Amsterdam, 1941), pp. 54-5; D. Magie, *Roman Rule in Asia Minor*, II (Princeton, 1950), p. 1533, n. 8.

This paper was completed at the Institute for Advanced Study, where I had the privilege of spending the academic year 1958-1959.

[2] *Enc. Brit.*, XXI, p. 693 (11th ed.).

[3] *Lectures on the History of Rome*[2], III (London, 1849), p. 251 (Lecture CXXI).

asserted that over half of the Empire's population perished; the settlement of Germans which followed led to fundamental changes of lasting importance.[4] In a standard work of our own time H. M. D. Parker writes, "Sweeping over the Roman world it left many districts almost depopulated and contributed perhaps more than any other factor to the decline of the Empire."[5] A. E. R. Boak presents essentially the same thesis in his important *Manpower Shortage and the Fall of the Roman Empire in the West* (Ann Arbor, 1955). Even when no such far-reaching results are ascribed to it, it is often represented as an unexampled disaster of great dimensions, perhaps in vague but extravagant phrases. The rather rhetorical description in the usually sober *Cambridge Ancient History* will serve as an example.[6] Other scholars, of course, have been less impressed by it and have assigned it no significant role in the history of the ancient world in the second and later centuries.[7]

But it is not my intention to write an essay on the part that the plague has played in modern historiography. I propose, rather, to present a summary of our sources and comment on some. They vary considerably in date, quality, and character, and should be used with caution and discrimination. Those that deserve the least credit are among those most often quoted or copied, probably because they contain the most comprehensive and impressive statements. I will survey first the literary evidence, which remains much the most important, and will then consider certain inscriptions, papyri, and coins that have been connected with the plague. I will also discuss the settlement of barbarians within the Empire by Marcus Aurelius, since this has been taken as evidence of depopulation resulting from the plague. There will be a brief conclusion but no attempt to

[4] *Geschichte des Untergangs der antiken Welt*, I[1] (Stuttgart, 1910), pp. 398-405.

[5] *A History of the Roman World from A.D. 138 to 337* (London, 1935), p. 20 (unchanged in 2nd ed. of 1958).

[6] XI, pp. 348-9 (W. Weber): "Only remnants returned. To the god-ridden East and the terrified soldiers it seemed as though the divine powers of the country punished, where men had failed, the presumptuous invader, the perfidious destroyer of Seleuceia. The troops carried with them into Syria the fell disease. . . . Spreading misery and death . . . it carried desolation through the peoples of the Empire."

[7] Gibbon is an obvious example. Another is Rostovtzeff.

provide an extended account of the epidemic. To anticipate, there is not enough evidence to identify satisfactorily the disease or diseases responsible,[8] to trace the epidemic's origin and spread with much accuracy, or to determine even approximately the number of those who died during it from year to year and region to region. The most important question to be kept in mind is that of the dimensions of the plague: whether we should think of it as an earlier Black Death, destroying a fifth or even half of the Empire's population, or as a major epidemic of uncertain but probably much more limited impact, more nearly comparable to its many predecessors in the ancient world.

1.

There is relatively little information in contemporary authors; one would hardly expect much considering those that survive. Galen is the most influential and important, especially for historians of medicine and writers on epidemics.[9] His references to it, however, are scattered and brief, and in the vast *corpus* of his writings there is nothing to correspond, for example, to the accounts of Thucydides, Boccaccio, or Defoe. He was not writing for later historians or the general reader. There is, in fact, not even a full, direct description of the disease itself. He was in Rome when the plague reached the capital in 166, but left soon after, perhaps in consequence.[10] The one specific episode that

[8] H. Haeser, *Lehrbuch*, III, pp. 24-33 concluded that the disease was probably smallpox. H. Zinsser, who discusses the effects of this and other epidemics in antiquity, concurs; *Rats, Lice and History* (Boston, 1935), p. 137. A. Castiglioni, *A History of Medicine* (New York, 1941), p. 244 suggests, without conviction, exanthematous typhus or perhaps bubonic plague. Clearly it is best for laymen to leave the question entirely open, as does George Sarton, *Galen of Pergamon* (Lawrence, 1954), p. 22. The experts continue to differ in their diagnosis of the plague at Athens, despite Thucydides' careful description. It should not be taken for granted that every mention of *lues, pestilentia*, or their Greek equivalents anywhere in the Roman Empire from around 161 to 192 must refer to the same disease; or that if *pestilentia* is mentioned at intervals, it must have been active during the years in between.

[9] The passages were collected and quoted by Hecker and Haeser (above, n. 1). See also J. Ilberg, *Neue Jahrbücher*, XV (1905), pp. 293-6, 303.

[10] XIX, p. 15 Kühn = *Scripta Minora*, II, p. 96 Mueller. He returned

he records is the outbreak among the troops concentrated at Aquileia during the winter of 168/169, when he was present.[11] Losses were heavy. He refers to the plague as a great one and, what is most significant, as persisting for a long time.[12] It may be noted that he was quite satisfied with his own ability to deal with the disease.[13] It did not, however, play an important part in his practice,[14] nor was it one of his chief interests. It is uncertain how many cases he saw after the winter at Aquileia. Marcus Aurelius seems to allude to the plague once in his *Meditations*.[15] Lucian speaks of it possibly twice. In *Quomodo hist. conscr.*, 15 he describes the work of an imitator of Thucydides who in his history of Verus' Parthian War wrote of a plague in Nisibis.[16] This had begun in Ethiopia, descended into

to his native Pergamum. Here and in other passages the plague is identified as *ὁ μέγας λοιμός*.

[11] XIX, p. 18 K. = *Scripta Minora*, II, pp. 98-9 M. The two emperors with a few soldiers fled to Rome, presumably regarded as a healthier spot at the time. Galen remarks that there were more deaths because the pestilence occurred in the middle of the winter. He later declined an invitation to accompany Marcus on his expedition against the Marcomanni, on the plea that Asclepius forbade him to go.

[12] V, p. 115 K. = *Corp. Med. Graec.*, V, 4, 1, 1, p. 76; X, p. 360 K.; XVII, 1, pp. 709, 710 K. = *Corp. Med. Graec.*, V, 10, 2, 1, pp. 144, 145; XVII, 1, p. 885 K. = *Corp. Med. Graec.*, V, 10, 2, 2, p. 53. In the second passage the plague is spoken of as great and continuing; in the others, as very long (*μακρόταιος, πολυχρονιώταιος*) but now ended. These come from *De atra bile* and the commentaries on Hippocrates, *Epidem.*, I and III, written apparently around the end of Marcus' reign or the beginning of Commodus'; the second passage is from Book V of the *De methodo medendi*, written a little earlier, under Marcus. For the dates see E. Wenkebach, *Abh. Sächs. Akad.*, XXXIX (1928), No. 1, p. 47, n. 1 and *Corp. Med. Graec.*, V, 10, 2, 2, p. ix; F. E. Kind, *R.-E.*, XIII, col. 2415; W. de Boer, *Wiener Stud.*, LI (1933), p. 60.

[13] XVII, 1, p. 710 K.; XIX, p. 524 K.

[14] See Ilberg, *loc. cit.*, p. 303.

[15] IX, 2. He mentions pestilence in order to say that corruption of mind is worse. See the commentary in A. S. L. Farquharson's edition, II (Oxford, 1944), pp. 791-2.

[16] The historian is Crepereius Calpurnianus, for whom see Jacoby, *F. Gr. Hist.*, II B, no. 208 and Kommentar, p. 629. Jacoby writes, "Crepereius hatte von der gefährlichen ausbreitung noch keine kenntnis, was bei der schnelligkeit, mit der diese historiker produzierten, nicht verwunderlich ist." Evidently Lucian was no better informed. At any rate, the point that interests him is Crepereius' slavish imitation of his

Egypt and into most of the King's country, and there remained doing good work. Lucian's attitude encourages us to be skeptical about the Thucydidean itinerary, but there is less reason to doubt that an epidemic actually occurred in the besieged city. If so, there is no way of telling whether the disease responsible was the same as that encountered by the Romans during the winter of 165/166 at Seleucia, where later writers state that the great plague began. In *Alexander*, 36 we find that this charlatan's practice included plagues, conflagrations, and earthquakes. A verse of his "which he dispatched to all the nations during the pestilence . . . was to be seen everywhere written over doorways."[17] Lucian adds that it was particularly these houses that were depopulated. Aristides records an epidemic at Smyrna probably in the summer of 165. The date makes it at least uncertain whether this was part of that associated with Verus'

model, not the epidemic itself. The *Historia Augusta*, cited below in n. 27, also speaks of the great pestilence spreading through Parthia. The chronology of the campaign is obscure. But probably the siege of Nisibis occurred in 165 and the sack of Seleucia at the very end of the same year or a little later. The epidemic at Seleucia then may have broken out around January, 166. For a recent summary of evidence see W. Schur, *R.-E.*, XVIII, 4, col. 2025; also R. H. McDowell, *Coins from Seleucia on the Tigris* (Ann Arbor, 1935), p. 234. It is especially hard to date the siege of Nisibis, which is sometimes placed in 164, but see C. H. Dodd, *Num. Chron.*, 4th ser., XI (1911), pp. 257-8. Lucian's dialogue appears to have been written in the spring or summer of 166. He refers to events in Media, but the triumph celebrated on October 12, 166 had not taken place (30-1). Cf. Helm, *R.-E.*, XIII, col. 1744.

[17] The translation is A. M. Harmon's in the Loeb edition. On the oracle see O. Weinreich, *Ath. Mitt.*, XXXVIII (1913), pp. 66-7. The plague is mentioned only in passing, and one would not gather that it was the great event of Lucian's and Alexander's age. This obviously is not a point to press. The dialogue was written after Marcus Aurelius' death. In *Dialog. mort.*, 4 Charon tells Hermes that he will be able to pay his debts if λοιμός τις ἢ πόλεμος should send down more passengers. This group of dialogues has been dated between the Parthian and Marcomannic Wars because of the present dialogue, in which peace is mentioned, and reference to the contemporary situation has been seen; see Helm, *R.-E.*, XIII, cols. 1738-9. If so, Charon's specific statement that he had few passengers might be offered as more reliable evidence than most of what we have for the death rate ca. 166-67. But from long experience Charon could expect an increase of income every few years owing to war, pestilence, or famine. In other words, it seems doubtful whether any particular war or pestilence is being referred to.

expedition, though it is generally taken to be. Aristides, as usual, is preoccupied with his own health, but he does say that disease was widespread in the city and its environs.[18] On the other hand, the great disaster of this generation at Smyrna appears to have been the earthquake of around 178, not an epidemic, whether general or local. Aristides describes the city as flourishing before the earthquake.[19]

[18] *Orat.*, XXXIII, 6; XLVIII, 38-9; L, 9; LI, 25 K. On the chronology of Aristides' life and writings, which appears now to be firmly established, see A. Boulanger, *Aelius Aristides et la sophistique dans la province d'Asie* (Paris, 1923), pp. 461-95; and J. H. Oliver, *Trans. Amer. Philosoph. Soc.*, XLIII, 4 (1953), p. 886, n. 1 (other references); on the plague, see Boulanger, pp. 146, 480-1. Aristides had the unfortunate habit of dating events by years of his illness, and his private chronology has been variously related to better known systems. One result is that outbreak of pestilence in the East has sometimes been placed in 162 even in some authoritative recent works; so Friedländer, *loc. cit.* (in n. 1); W. Hüttl, *Antoninus Pius*, II (Prague, 1933), p. 42; and H. Mattingly, *Coins of the Roman Empire in the British Museum*, IV (London, 1940), p. cii. This date depends first on accepting a certain chronology for Aristides (now outmoded) and secondly on identifying the epidemic that he mentions with that known at Seleucia. If Aristides' epidemic belongs to the summer of 165, as it apparently does, it is tempting to connect it with that which became widespread in the following years. In that event, however, the commonly repeated account of the pestilence beginning in Mesopotamia at the end of Verus' campaign must be modified or rejected. Further, Aristides' description of the disease does not correspond very well to Galen's occasional remarks about the great plague, though the account of neither is full or quite satisfactory; see J. Keil and A. von Premerstein, *Denkschr. Akad. Wien*, LIII, 2 (1908), p. 11. It may be observed that in the *Peregrinus* Lucian makes no mention of the plague in his description of the gathering at the Olympic Games of 165, to adopt the date most commonly accepted for the dialogue. Almost certainly he would have taken notice of a large epidemic; cf. the reference to the diseases ended by Herodes Atticus' provision of water (19).

[19] For the earthquake, for which there is considerable evidence, see Aristides, XVIII-XXII Keil; Boulanger, *Aristides*, pp. 325-9, 385-91; C. J. Cadoux, *Ancient Smyrna* (Oxford, 1938), pp. 279-83. The point of interest here is the contrast which Aristides repeatedly draws between Smyrna's thriving state before the calamity and the ruin and desolation which followed. This is in keeping with accepted rhetorical principles. Still, if the earthquake had been a second great disaster and if serious depopulation following a plague already existed, he might have mentioned the fact in his appeals for aid. Further, another oration (XVII)

Unfortunately we do not have Dio Cassius' account of the plague under Marcus Aurelius.[20] However, there is his interesting statement that the pestilence that broke out in Commodus' reign around 189 was the greatest of which he himself had knowledge; in this often two thousand persons died in Rome in a single day (LXXII, 14, 3-4). Whether he was accurate or not, Dio was in a far better position to judge and compare the severity of the epidemics under Marcus Aurelius and Commodus than were later authors.[21] Philostratus, his contemporary, reports that the Athenians when complaining to Marcus Aurelius about Herodes Atticus exclaimed: *μακάριοι οἱ ἐν τῷ λοιμῷ ἀποθνήσκοντες.*[22]

The remaining writers all belong to the fourth or fifth century. The biographer of Marcus Aurelius mentions the pestilence four times: the substance of his somewhat repetitious but essentially credible account is that many thousands died in Rome, includ-

probably delivered in 176 and addressed to the emperor describes the city as flourishing. No one will doubt that it is stylized rhetoric. On the other hand, after reading these orations it is difficult to believe that anything approaching the Black Death occurred in Smyrna during the decade beginning in 165.

[20] Xiphilinus contains a passage stating that many soldiers were lost through famine and disease on the way back to Syria from Seleucia and Ctesiphon (LXXI, 2, 4). See Boissevain's note at the beginning of the fragments of this book of Dio.

[21] Herodian, I, 12, 1 also mentions the outbreak under Commodus as occurring in Italy and especially Rome. It affected animals as well as men and accompanied a famine. Dio was praetor in 194 and hence was born not later than 164, and possibly several years earlier. If the later stages of the epidemic under Marcus Aurelius were widespread and serious, Dio might well have had some recollection of them, aside from what he heard from others and found in his sources. He was in Rome throughout Commodus' reign. It is not certain that the disease causing the epidemic of 189 was the same as that supposedly brought back by Verus. Despite good reasons for taking Dio seriously, his statement is the sort that even a responsible historian would be tempted to make, if at all posible; cf. n. 82. What other epidemics he had in mind in writing *μεγίστη ὧν ἐγὼ οἶδα* is not clear; presumably at least the last two decades or so were covered. His phrase reminds one of those Herodotus used when he turned from myths to Croesus (I, 5-6).

[22] The episode took place at Sirmium ca. 173 or 174; see Zwikker, *Marcussäule*, pp. 199-201. Heavy losses of life have been assumed but without further direct evidence. See C. Wachsmuth, *Die Stadt Athen im Altertum*, I (Leipzig, 1874), p. 702; J. H. Day, *An Economic History of Athens under Roman Domination* (New York, 1942), p. 196.

ing many prominent men;[23] that many thousands of soldiers died;[24] that extraordinary measures were taken in enlisting recruits;[25] and that Marcus referred to the pestilence on his deathbed.[26] In the life of Verus we are told that the pestilence arose in Seleucia in a temple of Apollo when a *spiritus pestilens* was released from a golden casket.[27] It then spread among the Parthians and throughout the world, following Verus all the way back to Rome. Ammianus Marcellinus gives a similar story, stating that the pestilence spread to the Rhine and Gaul.[28] The *Epitome de Caesaribus*, 16, 3 mentions *lues crebrae* along with earthquakes, floods, and locusts. Eutropius states that a very large part of the population throughout the Empire perished, as well as whole armies,[29] and Jerome says substantially the

[23] . . . *Tanta autem pestilentia fuit, ut vehiculis cadavera sint exportata serracisque. tunc autem Antonini leges sepeliendi sepulchrorumque asperrimas sanxerunt, quando quidem caverunt ne quis ut vellet fabricaretur sepulchrum. quod hodieque servatur, et multa quidem milia pestilentia consumpsit multosque ex proceribus, quorum amplissimis Antoninus statuas conlocavit. tantaque clementia fuit, ut et sumptu publico vulgaria funera iuberet ecferi* . . . (S. H. A., *Marc.*, 13, 3-6).

[24] . . . *Bellum Marcomannicum* . . . *cum virtute tum etiam felicitate transegit, et eo quidem tempore quo pestilentia gravis multa milia et popularium et militum interemerat* (17, 2).

[25] *Instante sane adhuc pestilentia et deorum cultum diligentissime restituit et servos, quemadmodum bello Punico factum fuerat, ad militiam paravit, quos voluntarios exemplo volonum appellavit. armavit etiam gladiatores, quos obsequentes appellavit. latrones etiam Dalmatiae atque Dardaniae milites fecit. armavit et diogmitas. emit et Germanorum auxilia contra Germanos* (21, 6-7).

[26] "*Quid de me fletis et non magis de pestilentia et communi morte cogitatis?*" (28, 4).

[27] *Fuit eius fati, ut in eas provincias, per quas redit, Romam usque luem secum deferre videretur. et nata fertur pestilentia in Babylonia, ubi de templo Apollinis ex arcula aurea, quam miles forte inciderat, spiritus pestilens evasit, atque inde Parthos orbemque complesse* . . . (S. H. A., *Ver.*, 8, 1-2).

[28] . . . *Ex adyto quodam concluso a Chaldaeorum arcanis, labes primordialis exiluit, quae insanabilium vi concepta morborum, eiusdem Veri Marcique Antonini temporibus, ab ipsis Persarum finibus ad usque Rhenum et Gallias, cuncta contagiis polluebat et mortibus* (XXXI, 6, 24). The *adytum* was in a temple of Apollo.

[29] *Bellum ipse unum gessit Marcomannicum, sed quantum nulla memoria fuit, adeo ut Punicis conferatur. nam eo gravius est factum,*

same thing.[30] Orosius, who depends on him in part, describes great devastation everywhere and stresses losses in the army.[31]

No contemporary Christian writer seems to mention the plague,[32] but a passage from Tertullian may be cited as being possibly relevant. In *De anima* 30 (*ca.* 210-213) he argues at length that the population of the world has long been increasing and still was in his day: *certe quidem ipse orbis in promptu est cultior de die et instructior pristino . . . summum testimonium frequentiae humanae. . . .*[33] He is obviously concerned with theological controversy not with demography, but at least

quod universi exercitus Romani perierant. sub hoc enim tantus casus pestilentiae fuit, ut post victoriam Persicam Romae ac per Italiam provinciasque maxima hominum pars, militum omnes fere copiae languore defecerint (VIII, 12).

[30] *Lues multas provincias occupavit Roma ex parte vexata* (*Chron.*, p. 205 f Helm, A. D. 168); *tanta per totum orbem pestilentia fuit, ut paene usque ad internecionem Romanus exercitus deletus sit* (p. 206 h Helm, A. D. 172, evidently inserted by Jerome himself).

[31] *Secuta est lues plurimis infusa provinciis, totamque Italiam pestilentia tanta vastavit, ut passim villae, agri atque oppida sine cultore atque habitatore deserta in ruinas silvasque concesserint. exercitum vero Romanum cunctasque legiones per longinqua late hiberna dispositas ita consumptas ferunt, ut Marcomannicum bellum, quod continuo exortum est, non nisi novo dilectu militum, quem triennio iugiter apud Carnuntium Marcus Antoninus habuit, gestum fuisse referatur* (VII, 15, 5-6; cf. 27, 7). Zangemeister in his edition in the Vienna Corpus cites Jerome and remarks: "plurimis *pro* multis *more suo Orosius.*" One can feel confident that the process of exaggeration did not begin with Orosius. He needed no particular stimulus to present the plague in the strongest language possible, but it should be noted that the passage follows an account of persecutions of Christians. Cf. the sequence of disasters, including 30,000 deaths from pestilence, which he regards as the consequence of the Neronian persecution (VII, 7, 11-8, 2).

[32] E. g., Eusebius in the *Hist. Eccl.* seems to have found nothing to correspond to Dionysius' account of the epidemic in the mid-third century. *Orac. Sibyl.*, XII refers to famine and pestilence under Vespasian (line 114) and famine under Domitian and Trajan (lines 134, 157) but mentions no such calamity under Marcus Aurelius (lines 178-86). These Jewish-Christian texts contain many references to real or anticipated famines and pestilences; cf. Luke, 21, 10-11 and Matthew, 24, 7.

[33] See the commentary of J. H. Waszink in his edition of the *De anima* (Amsterdam, 1947), pp. 370-6. In *Apol.*, 40, 13-14 he claims that from the time the world received Christians, its troubles became lighter.

if a fifth or half of the population of the Empire had been lost during and after the plague, Tertullian either did not know or ignores the fact.

2.

A number of Greek inscriptions have been connected with the plague. In none of them, however, is the connection entirely certain or necessary. Some have actually turned out to belong to a later period,[34] but others are possibly or probably Antonine in date.[35] One of those most often cited is addressed to Meles, a river-god at Smyrna.[36] Another is the epitaph of a Spartan who

[34] Schwendemann, p. 57, following earlier scholars, states that the cult of Telesphorus was introduced at Athens as the result of the plague. This appears to be an unfounded conjecture. Kaibel, 1027, which mentions Telesphorus and contains the phrase *βαρυαλγὴς νοῦσος* (taken by Schwendemann to be the plague under Marcus Aurelius), is not earlier than the third century; see the more recent edition, *I. G.*, II², 4533. Liddell-Scott-Jones cites the phrase as appearing in Kaibel, 228 = W. Peek, *Griechische Vers-Inschriften*, I (Berlin, 1955), 970 (Ephesus, first century A. D.) and in Kaibel, 803 = *Inscr. de Délos*, 2388. The other two inscriptions which Schwendemann cites as connecting Telesphorus with the plague are also later: *I. G.*, II², 2127 (194/195) and 2227 (*ca.* 224/225); for the dates see J. Notopoulos, *Hesperia*, XVIII (1949), pp. 30-1, 46.

More recently, another Athenian inscription was thought to contain evidence for the plague, on what seemed to be good grounds. A new fragment, however, showed that the pertinent section should be dated *ca.* 226. See J. H. Oliver, *Hesperia*, V (1936), pp. 92-3, 102, 108, 121 and *T. A. P. A.*, LXXI (1940), pp. 306-9; W. K. Pritchett, *A. J. P.*, LIX (1938), pp. 343-5; Notopoulos, *loc. cit.*, p. 33.

[35] One is Kaibel, 375 = Peek, 607 (Aezani, Phrygia). Kaibel emended the copy he used to read a phrase occurring in Alexander's oracle (above n. 17). Another copy discovered later provides a different reading. An inscription from Tutludja in southern Mysia mentions *ἀργαλέην νοῦσον*, which was taken to be the great plague by Kaibel, *Rh. Mus.*, XXIV (1879), p. 199 and K. Buresch, *Aus Lydien . . .* (Leipzig, 1898), pp. 139-40. This is possible but uncertain; see n. 42. A third text, from Rome, dated by Peek as second or third century mentions plague with interesting details. See G. Jacopi, *Bull. Com.*, LXVI (1939), pp. 23-4; J. and L. Robert, *R. E. G.*, LIV (1941), p. 268, No. 182; Peek, 993.

[36] *C. I. G.*, 3165 = Kaibel 1030; cf. Cadoux, *Ancient Smyrna*, p. 11, n. 7, who saw the original in 1930. It reads: *Τμνῶ θεὸν Μέλητα ποταμὸν τὸν σωτῆρά μου, παντὸς δὲ λοιμοῦ καὶ κακοῦ πεπαυμένον.* From Boeckh's time the lines have been repeatedly dated in Marcus Aurelius' reign, on the assumption presumably that pestilence and other such ills did

died probably during Verus' campaign.[37] The most interesting and important, as showing the concern of communities, are three oracles found at Caesarea Trocetta,[38] Pergamum,[39] and Callipolis (Gallipoli).[40] All may have been delivered by Apollo Clarius.[41] The first two, which are better preserved, refer to famine as well as disease. Possibly the occasion for one or all three was the great plague, but this should not be regarded as established, as it commonly is; in fact, there are positive reasons

not occur at Smyrna in other periods. R. Herzog has suggested that the author may be Aelius Aristides; *S. B. Berlin Akad.*, 1934, pp. 768-9. W. M. Ramsay, *J. H. S.*, III (1882), p. 57, stated that the form of the letters indicated the end of the second century B. C. This may very well be wrong; so Buresch, *Klaros*, p. 75. But apparently no one since Ramsay who has seen the stone has expressed an opinion.

[37] *I. G.*, V, 1, 816; cf. 817, 818. He died at Hierapolis on his return from a successful campaign against the Persians. Some scholars have connected this and related inscriptions from Sparta with Verus' Parthian expedition, others with that of Caracalla. (Several of the texts are collected in Dessau, *I. L. S.*, 8878.) Spartans are known to have taken part in both. Premerstein presented persuasive arguments for the first possibility in *Klio*, XI (1911), pp. 358-66, and suggested that the man dying at Hierapolis may have been a victim of the plague (p. 364), which is possible. But the cause of death is not stated.

[38] *I. G. R. R.*, IV, 1498. Trocetta is south of the Hermus, near Kassaba. The inscription was first published by Buresch, *Klaros*, pp. 1-29, 67-8. A better edition is that of Keil and Premerstein, "(Erste) Reise . . .," *Denkschr. Akad. Wien*, LIII, 2 (1908), pp. 8-12. The oracle speaks of failure of crops and famine as having occurred and pestilence as anticipated. This is the convincing interpretation of Keil and Premerstein. See below n. 42.

[39] *C. I. G.*, 3538 = Kaibel, 1035 = *I. G. R. R.*, IV, 360. The titles of the city date the text between Trajan and Caracalla. The oracle provides measures against famine and pestilence, usually identified since Boeckh with that under Marcus.

[40] Kaibel, 1034; J. H. Mordtmann, *Ath. Mitt.*, VI (1881), pp. 260-4. Discussed by Buresch, *Klaros*, pp. 81-6; see also Weinreich, *Ath. Mitt.*, XXXVIII (1913), pp. 64-72. The text is fragmentary and obscure, but it does instruct that a statue of Apollo, λοιμοῦ ὑποσυναντήρ, be set up. Inscriptions said to be from Gallipoli often actually come from somewhere else; see J. and L. Robert, *Hellenica*, IX (1950), p. 85. But this at least was not brought there for the antiquities trade. Two *archontes* and two *tamiai* are named, who may some day be identified and dated.

[41] That from Trocetta is Clarian without question; so also that from Pergamum, as demonstrated by C. Picard, *B. C. H.*, XLVI (1922), pp. 190-7. Buresch's case for that from Gallipoli is less conclusive.

to doubt the connection.[42] Oracles were active throughout the second century, and it would not be surprising if many of the cities that regularly consulted them experienced a famine and epidemic every generation or so which resulted in an appeal for divine guidance.[43] In any event, at present these texts seem to add little to our information about the intensity and impact of the plague under Marcus Aurelius.

At first glance at least a group of Latin inscriptions [44] would appear to be more instructive. They concern the army, which is said to have been particularly affected by the plague, and contain figures which possibly have some relevance, though most are

[42] Keil and Premerstein, who are the only ones who have considered the question carefully and paid close attention to what the oracles seem to say, were inclined to regard those from Trocetta and Pergamum as referring to local famines, which gave rise, or threatened to do so, to sickness and death among animals and men, in a familiar pattern (pp. 10-11). (They do not deal with the fragmentary lines from Gallipoli.) Their study is too often ignored. Schwendemann does not refer to it, and Picard who cites only them for the Trocetta text still writes, "On sait précisément qu'en 166 ap. J.-C., au moment de la grande peste, la ville de Caesareia Trochetta . . ." (*loc. cit.*, p. 193). Magie did pay proper attention to their conclusions, *Roman Rule*, II, p. 1534, n. 9. They suggest that a local epidemic in the mid-second century may also be the explanation of the text from Tutludja (above n. 35).

[43] Provision is made for consultation on questions of public health in the decree concerning the oracle of Apollo Coropaeus (*S. I. G.*³, 1157, lines 11-13; Demetrias, shortly after 116 B.C.). See the study of L. Robert, *Hellenica*, V (1948), pp. 16-28, especially p. 21. Cf. Plutarch, *De Pythiae orac.*, 408 c for Delphi in his time. For famines during the first two centuries in Asia Minor and elsewhere see Rostovtzeff, *Soc. Econ. Hist. Roman Empire*,² II, pp. 599-600, n. 9; pp. 700-1, n. 21. Especially interesting is the famine which Galen describes. It lasted several years and was attended by severe and often fatal maladies. As Keil and Premerstein note, the circumstances would fit well the situation in the oracles. He made his observations in Asia, possibly before his first stay in Rome, which began in 162. See VI, pp. 749-52 K. = *C. M. G.*, V, 4, 2, pp. 389-91; cf. also VI, 620, 623, 686 K. = *C. M. G.*, V, 4, 2, pp. 305, 307, 347-8. For an earlier epidemic in Ephesus, ended by Apollonius of Tyana in remarkable fashion, see Philostratus, *Vita Apoll.*, IV, 4 and 10.

[44] The Latin inscription most often cited is *C. I. L.*, III, 5567 (Noricum, 182), which names four members of a family *qui per lucm vita functi sunt*. The date makes a connection with Verus' epidemic possible but not at all necessary.

merely approximate and all are quite ambiguous. These are chiefly texts listing legionary veterans at the time of their discharge. They may be tabulated as follows:

Text	*Legion*	*Province*	*Enlisted*	*Discharged*	*Number*
C. I. L., III, 6178	*V Macedonica*	Moesia Inf.	108/109	133(?)	ca. 200
A. E., 1955, 238	*II Traiana*	Egypt	132/133	157	136
C. I. L., III, 8110	*VII Claudia*	Moesia Sup.	134/135	159(?)	239
C. I. L., VIII, 18067	*III Augusta*	Numidia	140/141	166	ca. 250
C. I. L., III, 6580	*II Traiana*	Egypt	168	194	ca. 100
C. I. L., III, 14507	*VII Claudia*	Moesia Sup.	169	195	240+
C. I. L., VIII, 18068	*III Augusta*	Numidia	173	198	ca. 330

With only seven scattered figures, averages and other calculations would be of doubtful value even if most of the figures were not themselves estimates.[45] One might assume tentatively, however, that around 100 men who had enlisted in any year could ordinarily be expected to survive to be discharged some twenty-five years later. (It will be noticed that in the first four inscriptions men enlisted during two years were discharged together.) The assumption requires that three cases out of seven be regarded as exceptional. The number of men discharged in 157 is low;[46] that of those discharged in 195 and 198 is high in each case. Of particular interest here are the last three figures, those of men enlisted between 168 and 173.[47] The first is approximately average, and if it represents the survivors of a normal number of recruits, they were not much affected by the plague. The last two, as already stated, are high. One possible explanation

[45] Of the last four figures that for 195 is very close to being exact. The others are based at best on the number of names preserved in two or three cohorts only, and must be used with caution. That for 166 is based on two incomplete cohorts (at least 23 and 25 being discharged); that for 194 on three complete cohorts (10, 12, 6) and one incomplete (8 +); that for 198 on two complete cohorts (32, 33).

[46] For comments on this point see J. F. Gilliam, *A. J. P.*, LXXVII (1956), p. 359, n. 3. If the date of the text were 167, not 157, it would probably be used as evidence to show the effect of the plague. On the life expectancy of Roman soldiers see A. R. Burn, *Past and Present*, No. 4 (1953), p. 10.

[47] The men discharged in 166 were released in the first part of the year, before the emperors became *Imp. IV*. In fact, a date in December 165 might be possible. In any event, the plague could not yet have reached Africa.

is that the heavy recruiting in 169 and 173 was made necessary by losses suffered in action and especially through the plague.[48] Certainly the figures can reasonably be connected with the Marcomannic War, and in the case of the *III Augusta* also with a serious revolt of the Moors around 173.[49] But they would not be at all surprising if there had been no plague; during any war enlistments would be expected to rise sharply.[50] The only certain fact is that a larger than usual number of veterans remained to be discharged and, obviously, had not themselves been carried off by plague in the years from 169 to 198.

There is similar evidence for the practorians, which has been collected by M. Durry.[51] He calculates that in the second century the mean figure for discharged veterans was five a year from each *centuria*. This figure falls to two in a list from 172. Evidently there were heavy losses in which the plague may have played some part. But whether it is a considerable factor is quite uncertain, and with smaller figures any conclusion must be somewhat tentative.

In all discussions of such texts, including that in the preceding paragraphs, it is assumed that the number of recruits taken into a unit remained relatively stable from year to year, in the absence

[48] See F. Ladek, A. von Premerstein, and N. Vulić, *Jahreshefte*, IV (1901), Beibl., cols. 82, 93; so also Schwendemann, pp. 68-9. The *VII Claudia* had seen action; some of the surviving veterans had been decorated. See Ritterling, *R.-E.*, XII, cols. 1622-3.

[49] The legion sent a detachment to take part in the campaigns on the Danube, and had earlier contributed men for Verus' expedition; see Ritterling, *R.-E.*, XII, cols. 1622-3. For the revolt, which involved a raid into Baetica, see R. Cagnat, *L'armée romaine d'Afrique*,[2] I (Paris, 1913), pp. 50-1. Schwendemann, p. 89, connected the large number of recruits with the revolt.

[50] Aside from losses suffered during campaigns, at the beginning of a war heavy enlistments would probably be required to prepare legions for combat. See e. g. Fronto on the condition in which Verus found the Syrian legions: *Princip. hist.*, p. 206 Naber = p. 195 van den Hout.

[51] *Les cohortes prétoriennes* (Paris, 1938), pp. 84-5. This should be compared with the comments and corrections of A. Passerini, *Le coorti pretorie* (Rome, 1939), pp. 60-1; see also Zwikker, *Markussäule*, pp. 223-4. The cohorts took an active part in the war; two of their prefects fell in combat. The discharge of some of those released in 172 had been delayed, and others may have been retained still longer, either in the cohorts or e. g. as legionary centurions.

of developments such as war or plague. The assumption becomes more difficult to make when we examine the rosters of the *cohors XX Palmyrenorum*.[52] These contain, e. g., the following number of men enlisted in the years 200-206: 12, 94, 27, 75, 109, 45, 11; and in 213-218: 0, 119, 40, 129, 3, 0. Some of this fluctuation can be related to war or other known events, fiscal policy, and the like, but the explanation in other cases is not clear. We should expect less fluctuation in a legion; for one thing, it was a larger unit. However, there probably was considerable irregularity, not all of which we could expect to predict or explain. To a certain extent, such fluctuation might tend to be self-perpetuating. For instance, the number of veterans discharged from the *III Augusta* in 198 might have resulted in an unusually large number of recruits being enlisted in that year. In turn, these same veterans as recruits in 173 had replaced men enrolled around 148/149, in the middle of a difficult war in Mauretania,[53] when very probably there were heavy enlistments.

In short, the most impressive figures, those for legionaries discharged in 195 and 198, may reflect in part losses from plague suffered a generation earlier. But since we have other quite adequate explanations, the role of the plague may have been quite small.

Two groups of papyri have been related to the plague.[54] The

[52] See the summary and comments of R. O. Fink in *Excavations at Dura-Europos, Final Report V, part 1: The Parchments and Papyri* (New Haven, 1959), p. 34.

[53] See Cagnat, *L'armée romaine*², I, p. 50.

[54] Another pair of texts may also be mentioned. E. J. Knudtzon has explained the differences between the lists of the priests of Soknobraisis in 171 and 188 as the result of plague in those years; *Bakchiastexte* . . . (Lund, 1946), pp. 84-5. There are eight priests under sixty in the earlier list, none of whom Knudtzon thought survived in 188. But the first three men in the second list, very possibly those who had served longest, have the same names (very common ones) as three in the first (*P. Bacchias*, 5 and 2). There are discrepancies in the ages given, ranging from one year to six. But one of the three in question in the first list is said to be 33 on August 11, while on June 14 of the same year he is put down as 35 (*P. Bacchias*, 2 and 19). After seventeen years even more confusion about ages may have developed, and from one to three of the eight priests may have survived. For the texts designated *P. Bacchias* see E. H. Gilliam, *Yale Class. Stud.*, X (1947), pp. 179-281.

first is a set of documents from the Mendesian nome in the Delta. One of a more general character states that villages which had formerly been populous were now reduced to a few men. The situation had been brought to the attention of a prefect when he visited the nome in 168/169.[55] The year 169/170 is mentioned in a fragmentary line below; it may be the date of this document, and is at least the approximate date of the whole series. The other texts are reports by village-secretaries, each for one village.[56] They follow essentially the same pattern. The secretary reports that the men registered in the village had for the most part disappeared (ἐγλελοιπέναι); a figure is given for an earlier, unspecified date (τὸ πάλαι) and another that is current (νυνὶ δὲ εἰς μόνους κατηρτηκέναι ἄνδρας —), of whom some have fled (ἀνακεχωρηκέναι). The figures preserved include the following: formerly 55, now 10, of whom 8 have fled; 27, 3, 3; 54, 4, 4. A summary of taxes assessed on the villages concludes the documents. Ulrich Wilcken studied the first three texts published from this group and explained the impressive drop in the figures as the result of the plague.[57]

More recently, A. E. R. Boak has estimated the population of Karanis in the years 171-174 as between 2160 and 2560, on the basis of tax-records of various kinds.[58] Another document gives the totals of the poll tax and pig tax collected at Karanis in the ninth year of an emperor not named.[59] On palaeographical grounds the editors concluded that the year was either 145/146 (preferably) or 168/169. The figures for the two taxes do not result in exactly the same number of tax-payers, but the difference is not great (958 and 1093). Boak, following the same formulas as in his earlier study, arrives at a minimum total

[55] *B. G. U.*, 903. The prefect, Bassaeus Rufus, had left office by January or February, 169; see A. Stein, *Die Präfekten von Ägypten in der römischen Kaiserzeit* (Bern, 1950), pp. 93-5.

[56] *B. G. U.*, 902; *Sammelbuch*, 8; *P. S. I.*, 101, 102, 105.

[57] *Festschrift zu Otto Hirschfelds sechzigsten Geburtstage* (Berlin, 1903), pp. 123-30.

[58] *Historia*, IV (1955), pp. 157-62. This interesting and valuable study also contains observations on other towns in the Fayum in the Roman and Byzantine periods.

[59] *P. Rylands*, 594. Discussed by Boak in *Historia*, VIII (1959), pp. 248-50.

population of 3636 and a maximum of 4063. Thus there is a loss of about 40 percent between 145/146 and 171-174. This he attributes to the plague, citing Wilcken's study, and concludes, "The above evidence shows the plague inflicted on Egypt a population loss from which it would have taken many generations to recover . . ." (p. 250).

One may begin by observing that apparently none of our sources, except Crepereius, states that the great plague extended to Egypt; at least none is cited. It is entirely possible, perhaps even probable, that it did visit Egypt. But epidemics do not spread in a uniform, entirely predictable manner, and it would be reassuring to have positive evidence that the cause existed before explaining situations as its results.

As regards the texts from the Mendesian nome, it was a natural inference that the reduction in the number of tax-payers was owing entirely or largely to deaths. But the texts do not say so; in fact, the explanation given for the currently continuing decrease is *ἀναχώρησις*. The Mendesian papyri are no longer unique. There are now a number of documents which reflect the same phenomenon in other periods, notably the middle of the first century. One may be quoted as employing practically the same phrases, giving in addition the reasons: . . . *ἀπὸ τῶν ἔμπροσθεν πολυανδρούντων ἐν ταῖς προκειμέναις κώμαις νυνὶ κατήντησαν εἰς ὀλίγους διὰ τὸ τοὺς μὲν ἀνακεχωρηκέναι ἀπόρους, τοὺς δὲ τετελευτηκέ[ναι] μὴ ἔχοντας ἀγχιστεῖς* . . . (*P. Graux*, 2 = *Sammelbuch*, 7462, A. D. 55/59).[60] It is not necessary to consider the problem

[60] Published by H. Henne, *Bull. Inst. Fr. Arch. Or.*, XXI (1923), pp. 189-214. On pp. 200-4 he discusses the Mendesian texts, explaining them as the result of developments similar to those reflected in his papyrus. The editors of *P. Rylands*, II, J. de M. Johnson, V. Martin, and A. S. Hunt, who published another group of papyri from the same find at Thmuis (in the nome of Mendes), had earlier expressed doubts about Wilcken's explanation (pp. 290-2). For other discussions of depopulation in Egypt at various periods, often local or temporary, see Rostovtzeff, *Soc. Econ. Hist. Roman Empire*,[2] II, p. 677, n. 52; J. G. Milne, *J. R. S.*, XVII (1927), pp. 1-13; H. I. Bell, *J. R. S.*, XXVIII (1938), pp. 4-8; XXXVII (1947), p. 19; and *Roman Egypt from Alexander the Great to the Arab Conquest*, (Oxford, 1948), pp. 77-8. On the fiscal aspect of *ἀναχώρησις* see S. L. Wallace, *Taxation in Roman Egypt from Augustus to Diocletian* (Princeton, 1938), pp. 137-40. For an interesting and pertinent general study of Roman Egypt in

at length here. The essential explanation appears to be the relentless exploitation of the peasants by the state and the principle of communal responsibility for taxes and other obligations. Once a few villagers began to run away to avoid their responsibilities, the burdens for those remaining steadily and rapidly became greater, as did consequently the temptation to run away in turn. We have in the Mendesian texts the last stages of such a process. It should be noted that Wilcken himself, when *P. Graux*, 2 was published, gracefully and completely abandoned his own explanation that the plague was responsible.[61]

The reduction in taxes collected and in tax-payers which is found at Karanis should probably be explained in substantially the same manner. Under Antoninus Pius there was a good deal of unrest in Egypt, involving runaway peasants.[62] We have evidence from the Fayum in 162 of peasants who had fled and were presumably avoiding taxes.[63] The revolt of the Βουκόλοι took place around 172 or 173. In short, the tax-records of Karanis in 171-174 might be expected to reflect the long-continuing difficulty in dealing with recalcitrant peasants and perhaps also something of the state of mind and problems that led to revolt in the Delta. This was serious enough to require the intervention of Avidius Cassius and Syrian troops, and it quite possibly did not make tax-collecting easier elsewhere.

4.

The evidence of the coins deserves brief mention, and though no one would expect them to provide vital statistics, a closer study than has yet been made might prove rewarding. The imperial coinage, however, appears to pay little attention to the plague and contains no clear reference to it.[64] To be sure, the

the first two centuries see C. Préaux, *Chron. d'Égypte*, XXXI (1956), pp. 311-31.

[61] *Archiv f. Papyrusf.*, VIII (1927), p. 311.

[62] The edict of Sempronius Liberalis in 154 (*B. G. U.*, 372 = Wilcken, *Chrest.*, 19) deals at length with disturbances and peasants who had left their villages; cf. S. H. A., *Ant. P.*, 5, 5.

[63] *P. Berl. Leihg.*, 7.

[64] Schwendemann, pp. 54-5, deduces from a medallion (Cohen, no. 872 = F. Gnecchi, *I Medaglioni Romani*, I [Milan, 1912], p. 33, no. 49) struck early in 166 that the plague was already wide-spread. It shows

types of Pietas and Salus[65] are found in these years as so often, but there is nothing so explicit and unambiguous as the appearance of Apollo Salutaris on coins in Gallus' reign. Without the literary evidence it seems doubtful whether the most expert and imaginative numismatists would have suspected a great epidemic under Marcus Aurelius. It is certainly best to conclude simply that this shows a limitation of the coins, despite their great value in so many respects, but at the same time some may find it a little harder to believe that the plague was as overwhelming and deeply felt an event as the Black Death.

The local coinage in the East perhaps might prove more instructive, particularly as suggesting more precisely where the epidemic existed or threatened, and some of the coins which have been connected with it may turn out to furnish pertinent and useful evidence.[66] There are, however, at least two problems.

Victory and Minerva confronting each other across an altar, on which is coiled a snake which Minerva is feeding. Schwendemann is evidently following W. Froehner, *Les médaillons de l'Empire Romain* (Paris, 1878), p. 89. H. Mattingly refers to the medallion as "not explained," *B. M. C. Roman Empire*, IV, p. cxlvi. On the type see also J. M. C. Toynbee, *Roman Medallions* (New York, 1944), p. 141. Several medallions of Marcus struck before 161, while Caesar, also portray Minerva feeding a snake; see Gnecchi, *Medaglioni*, II, p. 35, nos. 64-6; cf. also III, p. 32, no. 105. So reference to the plague in the later medallion seems doubtful.

[65] H. Mattingly and E. A. Sydenham thought that "the type of Pietas possibly alludes to the outbreak of the plague"; *The Roman Imperial Coinage*, III (London, 1930), p. 200. Mattingly later believed that Salus on coins of 168-169 suggests "anxiety over the ravages of the plague and the war"; *B. M. C. Roman Empire*, IV, p. cxxxvii.

[66] Schwendemann, p. 56, n. 2 lists a number which have as types Apollo, Asclepius, or the like. The first cited is *B. M. C. Thrace*, p. 116, no. 4, showing an Apollo Propylaeus, like that which the oracle found at Callipolis directed should be set up. But it dates under Antoninus Pius, when Marcus was Caesar. Asclepius and other such deities are common on coins both before and after the plague, and nothing much is proved by citing isolated examples from this period.

Ph. Lederer in *Deutsche Münzblätter*, LVI (1936), pp. 201-11 published an Alexandrian coin of 167/168 representing a "theoxenion." Among the deities on the couch is Sarapis. This was connected with the plague and Marcus' *lectisternium* in Rome; so also Zwikker, *Markussäule*, I, p. 55, n. 11 and p. 63. But the scene is repeated on a later coin published by Lederer, *Num. Chron.*, 5th ser., XVIII (1938), pp. 75-9. There seems to be no need to see a reference to the plague. For

One is the exact date of issues, often not easy to determine, and the other is to what degree types such as Asclepius are peculiar to or more numerous in the period of the plague. The second in particular would require a broad study.

5.

Indirect evidence for the effects of the plague has been seen in certain measures taken during the campaigns on the Danube. This view is well stated by Boak: "Most enlightening on the state of population is the shortage of recruits for the army in the time of Marcus Aurelius. That prudent emperor had to resort to settling conquered Marcomanni within the Empire as landholders under the obligation to supply soldiers to the Roman forces. Apparently, he had no trouble in finding vacant lands on which to place them." [87] Such considerations certainly existed in the third and especially fourth centuries.[88] and it would be rash to deny that they were not present at all in the second century. But a number of observations are called for, both general and specific.

In the first place, quite obviously no one would assume in all periods of antiquity a constant, direct relation between the total population and the number of men that might be mobilized or were in practice subject to service even in emergencies; there were many complicating factors, as in our own time. During the Empire the number of recruits drawn from different regions did not necessarily correspond at all to population. Provinces might increase in population and steadily provide fewer men. Or compare the forces raised in Italy during the Hannibalic War and during the civil wars at the end of the Republic with the contributions the same region made in the second or third century A. D. The differences must be explained by fundamental changes of several kinds, political, social, and moral among

such banquets in the cult of Sarapis see M. P. Nilsson, *Geschichte der griechischen Religion*, II (Munich, 1950), p. 663, n. 5; H. C. Youtie, *Harv. Theol. Rev.*, XLI (1948), pp. 9-29.

[87] P. 18. Similarly, Seeck, *Untergang*, I³, pp. 339-403; Parker, *Roman World from A. D. 138 to 337*, p. 23.

[88] E.g., . . . *Franciae nationes . . . avulsas ut in desertis Galliae regionibus conlocatae et pacem Romani imperii cultu iuvarent et arma dilectu* (*Panegyr.*, VI, 6, 2 Baehrens; Constantine).

others, and only in small part by depopulation. One point to remember is that recruits would not be enlisted for a campaign or for the duration of the war but for a period of some twenty-five years; in other words, for service in the standing, professional army.[69] No doubt during a war especially there was a scarcity of men willing to volunteer on these terms, or whom the government was prepared to conscript, but for every Marcomannus taken into the army there were dozens or hundreds of men of military age within the Empire who remained civilians. Augustus himself had resorted to rather desperate measures.[70] In fact, Pliny's account of his problems, both in substance and in coloring, sounds rather like that which we are expected to accept for Marcus' reign: . . . *iuncta deinde tot mala, inopia stipendii, rebellio Illyrici, servitiorum dilectus, iuventutis penuria, pestilentia urbis, fames Italiae* . . . (*N. H.*, VII, 149). The *mala* were real, but practically everyone would agree that under Augustus the number of both citizens and peregrines was steadily increasing.

Secondly, settlement of barbarians within the Empire in itself was nothing new; it is mentioned several times in the first century.[71] Conditions had changed in various ways, and a superficially similar act might have had a quite different significance. But one need not assume a general depopulation of the Empire

[69] In a very difficult crisis Vitellius offered better terms: *dilectum quoque ea condicione in urbe egit, ut voluntariis non modo missionem post victoriam, sed etiam veteranorum iustaeque militiae commoda polliceretur*, (Suet., *Vitell.*, 15, 1).

[70] He enlisted freedmen, in fact slaves freed for this purpose, on two occasions. See the discussion of K. Kraft, *Zur Rekrutierung der Alen und Kohorten an Rhein und Donau* (Bern, 1951), pp. 90-3. For an Antonine account of the principles of Roman recruitment see Aristides' *Roman Oration*, 74-87, with J. H. Oliver's commentary, *Trans. Amer. Phil. Soc.*, XLIII, 4 (1953), pp. 934-41. For an interesting recent essay on the whole subject of recruitment see E. T. Salmon, *Trans. Royal Soc. Canada*, third ser., LII, ii (1958), pp. 43-57. Cf. too the important remarks of A. Alföldi, *Historia Mundi*, IV (Bern and Munich, 1956), pp. 260-71.

[71] Under Augustus 40,000 Getae are said to have been settled south of the Danube; Strabo, VII, 303. A governor of Moesia in Nero's reign brought more than 100,000 barbarians across the river into his province; Dessau, 986. More examples could be given. See Rostovtzeff, *Soc. Econ. Hist. Roman Empire*[2], II, p. 739, n. 18 and Seeck, *loc. cit.* (n. 67).

in order to make room for fifty thousand Germans, if there were that many, scattered over several areas.[72] It may be worth recalling, too, that when these barbarians were settled, Marcus Aurelius was probably contemplating the creation of two new provinces beyond the Danube. The Empire was still vigorous and prepared to expand, as it had just done in the East. The settlement need not be regarded as the act of an enfeebled state. Further, Pannonia, one of the areas involved, probably suffered considerably, but Pannonians played a very conspicuous part in sustaining and defending the Empire during the next century and more. Whatever depopulation occurred there at the time as the result of war and disease does not seem to have seriously affected the supply of recruits in later generations.

Thirdly, the employment of recent enemies as auxiliary troops occurs too often in Roman history, in the second century and earlier,[73] to indicate declining population without further argument. The primary reason was presumably always to obtain useful and inexpensive troops. But the practice was also a way of controlling potentially troublesome groups.[74]

Finally, the sources cited do not seem to state that Marcus Aurelius' purpose in settling Germans within the Empire was to obtain recruits,[75] and there seems to be no evidence that any

[72] No figures for their number are given, though the *Historia Augusta* speaks of *plurimi* and *infiniti* (*Marc.*, 22, 2 and 24, 3). There may not have been 10,000 families in all. Dio Cassius, LXXI, 11, 4 reports that barbarians were given land in Dacia, Pannonia, Moesia, Germany, and Italy. It is easy to think of other reasons for dispersing them, but one possibility is difficulty in finding large blocks of land. A. Landry is another recent writer who interpreted the settlement of these Germans as evidence of depopulation; *Rev. historique*, CLXXVII (1936), p. 16.

[73] One example is the *numeri Brittonum* found in Germany from about 145. See E. Stein, *Die kaiserlichen Beamten und Truppenkörper im römischen Deutschland unter dem Prinzipat* (Vienna, 1932), pp. 245-58; H. T. Rowell, *R.-E.*, XVII, cols. 2537-8; E. Birley, *Roman Britain and the Roman Army* (Kendal, 1953), p. 44.

[74] See e. g. A. Alföldi, *Zu den Schicksalen Siebenbürgens im Altertum* (Budapest, 1944), pp. 73, 75.

[75] Dio Cassius, LXXI, 11, 4, in writing of certain unnamed barbarians distinguishes between those used as soldiers (*οἱ μὲν ἐστρατεύσαντο ἄλλοσέ ποι πεμφθέντες*) and those who received land in the Empire. It is not certain that the first group was enlisted in the Roman army. They may have been employed as allies of some sort; cf. the statement in the

appreciable number were enlisted in the Roman army. As a matter of fact, much the most conspicuous additions to the army at this time were two legions, *II* and *III Italicae*, recruited in Italy itself.[76] Probably no one would maintain that this shows a rapid rise in the population of the peninsula.

6.

What may be concluded from the evidence which has been summarized above? Some of its deficiencies are immediately obvious. The lack of accurate or extensive statistical data is only what we would expect. But there is no account of the plague which is comprehensive, precise, and reliable. Much of the evidence which is regularly cited is of doubtful value; some of it is probably not relevant. Perhaps in time inscriptions, papyri, and even coins will provide much more information, but at

Historia Augusta quoted in n. 25: *emit et Germanorum auxilia*, which suggests subsidized tribal forces, not regular Roman units. Valerius Maximianus, after being honored with *militia quarta*, was made *praep. equitib. gent. Marcomannor. Narist. Quador.* in the force sent against Avidius Cassius (*A. E.*, 1956, no. 124). These *gentiles*, too, may not have been fully incorporated in the Imperial army or employed for more than a few years. No *numeri* or other regular units enrolled from these tribes seem to be recorded.

[76] The exact date of their creation is unknown, but it now appears probable that recruiting at least continued after the Parthian campaign, i. e., after the pestilence had reached Italy. See Ritterling, *R.-E.*, XIII, cols. 1300-1, 1532: *ca.* A. D. 165; Weber, *Cambridge Ancient History*, XI, p. 352: A. D. 168; Zwikker, *Markussäule*, I, p. 55: 166/167; R. Egger, *Gnomon*, XVIII (1942), p. 329: shortly before 169. See also the important new inscription *A. E.*, 1956, no. 123 and H. G. Pflaum's commentary, *Libyca*, III (1955), pp. 123-33. It would seem a little strange that new legions were created if existing ones were seriously below strength.

On Sarmatians settled by Marcus Aurelius in Britain see I. A. Richmond, *J. R. S.*, XXXV (1945), pp. 15-29. This does not prove depopulation in the island any more than the settlement of *Brittones* on the continent a generation earlier indicates overpopulation. On the *cohortes Aureliae* probably raised during the war see A. von Premerstein and N. Vulić, *Jahreshefte*, III (1900), Beiblatt, pp. 151-2; W. Wagner, *Die Dislokation der römischen Auxiliarformationen . . .* (Berlin, 1938), pp. 108-9, 129-32, 179-80, 182. The explanation that Wagner, p. 182, offers for the *cohortes Sacorum* is doubtful; cf. Alföldi, *Zu den Schicksalen Siebenburgens*, p. 76.

present they contribute disappointingly little. We must rely primarily on the literary sources. An examination of them shows that the most striking, sweeping statements about the plague are found in fourth or fifth century writers. This may be largely explained by the fact that we have no earlier accounts of the period that are intact, but passages in several contemporaries or near-contemporaries make it harder to accept the statements of Eutropius and Orosius as they stand. One may suspect that the fame of the plague is owing in part to accident and, even more, to exaggeration. For example, if Galen had lived under Augustus,[77] Nero,[78] Titus,[79] or possibly Hadrian[80] and had described one of the epidemics which occurred in their reigns, modern histories of medicine would include another section and another great plague, and that under Marcus Aurelius would be less conspicuous. As it is, it often follows directly after the Thucydidean plague as if no other had intervened. The interests of historians and biographers, on whom we largely depend, suggest that not nearly as much would have been made of the plague if it had not been connected with major wars, in which emperors took command, and if it had not affected Rome itself. One obviously should hesitate before accepting literally all of their statements about Verus' campaign and the pestilence that followed. A good deal of rhetoric and exaggeration must be suspected in those who wrote the first accounts; certainly one would assume so after reading Fronto and Lucian. Some of the later writers depending on them were probably no more restrained.[81] Orosius, in particular, does not deserve implicit trust.

[77] Dio Cassius, LIII, 33, 4: LIV, 1, 2 (B.C. 23-22).

[78] Tacitus, *Ann.*, XVI, 13: . . . *omne mortalium genus vis pestilentiae depopulabatur. . . . domus corporibus exanimis, itinera funeribus complebantur; non sexus, non aetas periculo vacua; servitia perinde et ingenua plebes raptim extingui, inter coniugum et liberorum lamenta, qui dum adsident, dum defient, saepe eodem rogo cremabantur. equitum senatorumque interitus, quamvis promiscui, minus flebiles erant, tamquam communi mortalitate saevitiam principis praevenirent.* Cf. Suet., *Nero*, 39, 1.

[79] Suet., *Tit.*, 8, 3: . . . *pestilentia quanta non temere alias.* Cf. Dio Cassius, LXVII, 23, 5.

[80] S. H. A., *Hadr.*, 21, 5.

[81] It is worth noting that the *Historia Augusta*, with its more circumstantial account, is really less extravagant than Eutropius or Jerome,

Descriptions of pestilence in any period are likely to be highly colored and extravagant.[82] Like battles, they tempt writers to display their talents and make the most of their material, following established patterns. If the passages in the *Historia Augusta*, for instance, are compared with that cited from Tacitus (n. 78), there may seem to be less reason to regard the later epidemic as unique in character and its effects.

Nevertheless, after making due allowance for distortion and rhetorical convention, it is quite clear that there was a great and destructive epidemic under Marcus Aurelius. It seems probable, though by no means certain, that it caused more deaths than any other epidemic during the Empire before the middle of the third century.[83] On the other hand, infectious diseases were undoubtedly a very important factor in the high death rate of the ancient world in all periods. Great epidemics were nothing new. A reader of Livy, for example, will have the impression, probably quite correct, that the Roman Republic developed and expanded during a constant succession of pestilences.[84]

not to mention Orosius (cf. n. 31). Careless compression, their own or their sources', may help explain the exaggerated, sweeping statements found in the late compendia.

[82] They tend to sound very much alike, just as descriptions of battles do, or just as plague scenes in paintings are likely to resemble one another. One could probably collect from historians a considerable number of plagues, each of which was described as the greatest up to that time. A few examples are Dion. Hal., *Ant.*, X, 53 (451 B.C.); Zosimus, I, 26 (Gallus) and 37 (Gallienus). Cf. Dio and Suetonius above, nn. 21 and 79. They had of course a conspicuous model in Thucydides, II, 47, 3. Apparently no one, not even Orosius, is recorded as having made such a statement about the plague under Marcus Aurelius, at least until modern times.

[83] It is natural to assume that the losses from epidemics were greater from 165 to 190 than from 65 to 90, since we have good evidence that those in the later period were wide-spread and protracted. But there seem also to have been wide-spread epidemics under Domitian (Dio Cassius, LXVII, 11), and those cited above in nn. 78 and 79 need not have been confined to Italy. There was disease during the Jewish War in Palestine (e.g. Josephus, *B.J.*, IV, 361), which of course otherwise involved heavy loss of life.

[84] Dionysius in the passage cited in n. 82 informs us that nearly all the slaves and about half the citizens died. In the second century, where one can have more faith in his sources, Livy speaks of pestilence in XXXIX, 41; XL, 19, 6-8 and 36, 13-37, 7; XLI, 21, 5-10. There was

The essential question is how many died in the plague under Marcus Aurelius. It has been compared in its effects with the Black Death. Vastly more is known about this, though its dimensions and consequences remain a matter of controversy. One estimate, lower than many, is that about twenty percent of the population of England died of it during the three years 1348-1350, and that by 1400 the population had been reduced by half.[85] Are we justified in assuming that anything like twenty percent of the population of the Roman Empire, beyond the ordinary mortality of these years, were lost because of plague during any three years of Marcus Aurelius' reign, or during all of it? One percent, on a low estimate of the total population, would allow for at least 500,000 deaths; and two percent, a million deaths. I do not see that there is necessity or authority for assuming that there were more. The one pertinent figure that we have is Dio's two thousand a day[86] in Rome in 189 in an outbreak described as greater than any earlier one known to him, which certainly should include that under Marcus Aurelius. Until much more substantial evidence is presented, there seems insufficient reason for concluding that the plague was really comparable to the Black Death in its severity and its demographic effects and was a major turning point in Roman history. Perhaps it is unfair to maintain that the burden of proof rests on those who stress its importance, but it does seem reasonable that proof should be provided before unique disasters, extraordinary

occasionally difficulty as a result in filling quotas for military service. As is well known, the state religion provided various means for dealing with epidemics; see e.g. J. Gagé, *Apollon Romain* (Paris, 1955), pp. 69-83, 148.

[85] J. C. Russell, *Speculum*, XX (1945), p. 158, n. 1 and p. 167. The article is cited by Boak, who in general follows Russell as his authority for the period, for good reasons. See now Russell's "Late Ancient and Medieval Population," *Trans. Amer. Phil. Soc.*, XLVIII, 3 (1958). He discusses our epidemic briefly on p. 37.

[86] Higher, if perhaps more doubtful, figures are found: 10,000 a day for many days in Rome under Vespasian (Hieron., *Chron.*, p. 188 h Helm; perhaps the date is wrong and this refers to the epidemic under Titus); 5,000 a day under Gallienus (S. H. A., *Gall.*, 5, 5); 10,000 a day in Constantinople under Justinian (Procop., *Bell. Pers.*, II, 23, 2). Friedländer, *Sittengeschichte*, I[10], pp. 30-1 mentions a number of other pestilences recorded for Rome itself during the Empire from Augustus on and compares figures in more recent times.

developments, and basic changes in fundamental patterns are accepted. The "decline" of the Empire may well have been under way by Marcus Aurelius' time; from several points of view it can be argued that it was. But even if one agrees that depopulation became an important aspect of the process in the third century and later, he may doubt whether this plague contributed significantly and was a decisive factor in a long continuing development.

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